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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
FRIEDRICH LINHART, ET AL. : EXAMINER: WALTERS, ROBERT S.  
SERIAL NO: 10/554,286 :  
FILED: OCTOBER 25, 2005 : GROUP ART UNIT: 1792  
FOR: METHOD FOR IMPROVING :  
PRINTABILITY ON PAPER OR PAPER  
PRODUCTS WITH THE AID OF INK-JET  
PRINTING METHOD

APPEAL BRIEF

This is an appeal to the Board of Patent Appeals and Interferences under 35 U.S.C. § 134 from the January 5, 2011, Final Rejection of Claims 1-4, 6, 7, 9-15, 17, 18 and 22-24 of Application Serial No. 10/554,286, filed on October 25, 2005. A timely filed Notice of Appeal was submitted on June 6, 2011.

STATEMENT OF REAL PARTY IN INTEREST

The real party in interest in this appeal is BASF SE of Ludwigshafen, Germany 67056.

STATEMENT OF RELATED APPEALS AND INTERFERENCES

Appellant, Appellant's legal representative, and the Assignee, are aware of no appeals, interferences, or judicial proceedings that are related to, directly affect or would be directly affected by, or have a bearing on the decision of the Board of Patent Appeals and Interferences in this appeal.

### STATEMENT OF JURISDICTION

The Board of Patent Appeals and Interferences has jurisdiction under 35 U.S.C. § 134. This is an appeal to the Board of Patent Appeals and Interferences from the January 5, 2011, Final Rejection of Claims 1-4, 6, 7, 9-15, 17, 18 and 22-24. A timely filed Notice of Appeal was submitted on June 6, 2011.

### STATUS OF CLAIMS

Claims 5, 8, 16 and 19-21 have been cancelled.

Claims 1-4, 6, 7, 9-15, 17, 18 and 22-24 are pending.

Claims 1-4, 6, 7, 9-15, 17, 18 and 22-24 are finally rejected.

Claims 1-4, 6, 7, 9-15, 17, 18 and 22-24 are appealed.

The final rejection of Claims 1-4, 6, 7, 9-15, 17, 18 and 22-24 under 35 U.S.C. § 112, first paragraph (written description), is herein appealed.

### STATUS OF AMENDMENTS

No amendment under 37 C.F.R. § 1.116 has been filed.

### SUMMARY OF THE CLAIMED SUBJECT MATTER

It is preliminarily noted that references in brackets are to directed to respective page, line, table and example numbers of the present specification for an exemplary discussion.

Independent Claim 1, the only independent claim on appeal, is directed to a process for improving the printability of paper and a paper product [page 1, lines 4-5, page 2, lines 30-31] by enhancing the water resistance of ink-jet printed images [page 3, lines 1-3, page 6, lines 1-5], wherein said process comprises treating the paper or the paper product with an

aqueous solution comprising a cationic polymer [page 2, lines 35-36], wherein the cationic polymer is a hydrolyzed homopolymer of N-vinylformamide having a degree of hydrolysis of 50-100 % [page 3, lines 30-31, page 7, lines 20-34] and comprises positive charge providing units consisting essentially of vinylamine units [page 3, line 23, page 4, line 1]], has a charge density of at least 3 meq/g [page 2, lines 36-37, page 4, lines 2-7 and 39] and is used as the sole treatment composition in the aqueous solution [page 2, lines 36-37, page 4, lines 38-40], wherein said composition is applied in an amount of from 0.05 g/m<sup>2</sup> to 5 g/m<sup>2</sup> to the surface of the paper or the surface of the paper product [page 2, lines 37-38, page 4, lines 33-36], and wherein after the treatment with the cationic polymer the treated paper or paper product is not coated [page 2, lines 33-38, page 4, lines 38-40, page 5, lines 14-31 and 21-31, Example 2 at page 10, lines 1-7, Example 3 at page 10, lines 23-30].

As discussed in the present specification, the present invention is directed to a process for improving the printability of paper and a paper product by enhancing the water resistance and water fastness of ink-jet printed images printed thereon, wherein the process comprises treating the paper or the paper product with an aqueous solution comprising the claimed cationic polymer which is used as the sole treatment composition in the aqueous solution, wherein after the treatment with the cationic polymer the treated paper or paper product is not coated.

#### GROUND OF REJECTION TO BE REVIEWED

Claims 1-4, 6, 7, 9-15, 17, 18 and 22-24 stand finally rejected under 35 U.S.C. § 112, first paragraph (written description).

## ARGUMENT

Final Rejection of Claims 1-4, 6, 7, 9-15, 17, 18 and 22-24 under 35 U.S.C. § 112, first paragraph (written description).

The Examiner erred in concluding that sufficient written description does not exist in the originally filed application for the negative limitation recited in claim 1 that “after the treatment with the cationic polymer the treated paper or paper product is not coated.”

The originally filed specification is alleged as failing to provide adequate written description for the negative limitation recited in claim 1 that “after the treatment with the cationic polymer the treated paper or paper product is not coated.”

Pursuant to *In re Wertheim*, 541 F.2d 257, 265 (1976), the exact terms recited in the claimed invention need not be used *in ipso verbis* or *in haec verba* in order to satisfy the written description requirement of 35 U.S.C. § 112, first paragraph. See also MPEP §§ 1302.01 and 2163.05(III).

What is required is that the claimed invention must have been described with sufficient particularity such that a skilled artisan would recognize that the Applicants had possession of the claimed invention when the application was filed. See 35 U.S.C. § 112, first paragraph, and MPEP § 706.03(c).

It is a well-settled premise of patent law that a negative limitation or exclusionary proviso explicitly excluding an element from a claim is permissible, especially when the element recited in the negative proviso is positively recited in the specification. See MPEP § 2173.05(i) and *In re Johnson*, 558 F.2d 1008, 1019, 194 USPQ 187, 196 (CCPA 1977) (the specification, having described the whole, necessarily described the part remaining).

With respect to the negative limitation recited in claim 1 that “after the treatment with the cationic polymer the treated paper or paper product is not coated,” the present specification clearly discloses applying a coating of the aqueous solution comprising the cationic polymer of the present invention “on the top surface of the paper or of the paper products” and “in the case of *coated paper* ... once on the base paper, once before and once after the *final coat*, or once after the *preliminary coat*, once after the *middle coat* and once after the *final coat*, or once before and once after the *final coat*” (emphasis added) (See e.g., page 5, lines 14-19). The present specification also clearly discloses applying a coating of the aqueous solution comprising the cationic polymer of the present invention “to a natural paper or to a *coated paper* after the *final coat*” (emphasis added) (See e.g., page 5, lines 21-23).

One of ordinary skill in the art would immediately recognize that the “coated paper,” the “preliminary coat,” the “middle coat” and the “final coat” disclosed in the present specification clearly refer to a coating composition other than the claimed coating of the aqueous solution comprising the cationic polymer of the present invention.

The present specification actually exemplifies applying the coating of the aqueous solution comprising the cationic polymer of the present invention to a *coated paper which had already been provided with a coating composition other than the coating of the present invention* (See e.g., Example 2 at page 10, lines 1-7, Example 3 at page 10, lines 23-30).

As exemplified in Examples 1-4 of the originally filed specification, *no additional coating* is applied to the paper or paper product *after* treatment with the aqueous solution comprising the cationic polymer of the present invention.

The originally filed specification and claims clearly disclose and recite that the aqueous solution comprising the cationic polymer of the present invention is used as the “*sole treatment composition*” (emphasis added) (See e.g., page 2, lines 33-38, page 4, lines 38-40, and page 15, lines 6-9, as well as original claim 1).

Based on the disclosure of the originally filed specification, a skilled artisan would immediately recognize that coating the paper or paper product with an additional coating after the treatment of the final coat of the aqueous solution comprising the cationic polymer of the present invention would be *counterproductive*, and *materially effect the basic and novel characteristics* of the claimed invention, since the cationic polymer would be covered by the additional coating, thereby eliminating the beneficial effects imparted by the cationic polymer to the printability of the paper or paper product, with respect to the remarkably improved water resistance and water fastness of the ink-jet printed images printed thereon.

Why would a skilled artisan *invest time and incur undue expense* to treat the final coat with the aqueous solution comprising the cationic polymer only to immediately thereafter cover the cationic polymer with an additional coating and thereby eliminate the beneficial effects imparted by the cationic polymer to the printability of the paper or paper product?

Applicants respectfully submit that a skilled artisan would immediately recognize that adequate support for the presently claimed invention has clearly been provided by the express, implicit and inherent disclosure set forth in the originally filed specification, as evidenced hereinabove. Since the specification describes the claimed invention in sufficient detail such that a skilled artisan would reasonably conclude that the inventors had possession of the claimed invention at the time of filing, the negative limitation recited in claim 1 that “after the treatment with the cationic polymer the treated paper or paper product is not coated” has not resulted in the introduction of new matter.

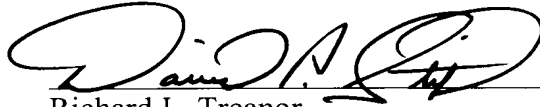
As a result, the negative limitation explicitly excluding coating the treated paper or paper product after the treatment with the cationic polymer of the present invention has not resulted in the introduction of new matter.

CONCLUSION

For the above reasons, it is respectfully requested that the Final Rejection of Claims 1-4, 6, 7, 9-15, 17, 18 and 22-24 under 35 U.S.C. § 112, first paragraph (written description), be reversed.

Respectfully submitted,

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A handwritten signature in black ink, appearing to read "Richard L. Treanor", is written over a horizontal line.

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CLAIMS APPENDIX

Claim 1 (Rejected) A process for improving the printability of paper and a paper product by enhancing the water resistance of ink-jet printed images, wherein said process comprises treating the paper or the paper product with an aqueous solution comprising a cationic polymer, wherein the cationic polymer is a hydrolyzed homopolymer of N-vinylformamide having a degree of hydrolysis of 50-100 % and comprises positive charge providing units consisting essentially of vinylamine units, has a charge density of at least 3 meq/g and is used as the sole treatment composition in the aqueous solution, wherein said composition is applied in an amount of from 0.05 g/m<sup>2</sup> to 5 g/m<sup>2</sup> to the surface of the paper or the surface of the paper product, and wherein after the treatment with the cationic polymer the treated paper or paper product is not coated.

Claim 2 (Rejected) The process according to claim 1, wherein the charge density of the cationic polymer is from 3.5 meq/g to 23 meq/g.

Claim 3 (Rejected) The process according to claim 1, wherein the charge density of the cationic polymer is from 8 meq/g to 20 meq/g.

Claim 4 (Rejected) The process according to claim 1, wherein the cationic polymer has a molar mass M<sub>w</sub> of at least 10,000 Dalton.

Claim 5 (Cancelled).

Claim 6 (Rejected) The process according to claim 1, wherein the aqueous solution comprising the cationic polymer is applied to the paper or the paper product with the aid of a size press, a film press, a spraying means, a coating unit or a paper calender.

Claim 7 (Rejected) A paper which is obtained by the process according to claim 1.

Claim 8 (Cancelled).

Claim 9 (Rejected) The paper according to claim 7, wherein said paper is an ink-jet printing paper.

Claim 10 (Rejected) A paper product which is obtained by the process according to claim 1.

Claim 11 (Rejected) The process according to claim 1, wherein the cationic polymer has a molar mass  $M_w$  of from 50,000 Dalton to 5,000,000 Dalton.

Claim 12 (Rejected) The process according to claim 1, wherein the cationic polymer has a molar mass  $M_w$  of from 100,000 Dalton to 2,000,000 Dalton.

Claim 13 (Rejected) The process according to claim 1, wherein the aqueous solution comprising the cationic polymer has a viscosity of 3,000 mPa·s or less at 20°C.

Claim 14 (Rejected) The process according to claim 1, wherein the aqueous solution comprising the cationic polymer has a viscosity of 2,000 mPa·s or less at 20°C.

Claim 15 (Rejected) The process according to claim 1, wherein the aqueous solution comprising the cationic polymer has a viscosity of from 10 mPa·s to 1,000 mPa·s at 20°C.

Claim 16 (Cancelled).

Claim 17 (Rejected) The process according to claim 1, wherein the cationic polymer is applied to the paper in an amount of from 0.1 g/m<sup>2</sup> to 3 g/m<sup>2</sup>.

Claim 18 (Rejected) The process according to claim 1, wherein the cationic polymer is applied to the paper in an amount of from 0.5 g/m<sup>2</sup> to 2 g/m<sup>2</sup>.

Claims 19-21 (Cancelled).

Claim 22 (Rejected) The process according to claim 1, wherein the cationic polymer is a hydrolyzed homopolymer of N-vinylformamide having a degree of hydrolysis of 50-90 %.

Claim 23 (Rejected) The process according to claim 1, wherein the cationic polymer is a hydrolyzed homopolymer of N-vinylformamide having a degree of hydrolysis of 75-90 %.

Claim 24 (Rejected) The process according to claim 1, wherein the cationic polymer is a hydrolyzed homopolymer of N-vinylformamide having a degree of hydrolysis of 50-75 %.

EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.